Institutional Evaluation: A Framework for Building Organizational Capacity for IDRC's Research Partners

Draft

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FOREWORD

This guide is a joint undertaking of IDRC's Evaluation Unit and Universalia Management Group. Its purpose is to help IDRC program officers and other personnel strengthen their understanding of the Centre's partner institutions. Towards that end it provides a framework and a common language with which to approach institutional evaluations.

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Development agencies like IDRC are beginning to think of the monies they disburse as investments and of the totality of their choices regarding which researchers, projects, and institutions to support as an investment portfolio. Truly, these choices are investment decisions, with value for dollar an important measure of both individual and institutional performance in fulfilling mission and objectives.

IDRC's investment strategies have traditionally been a mix of specific project support and broader, institutional support. Strengthening the capacity of research institutions has always been the desired end result of IDRC's involvement, but the prevailing investment mode has been — and continues to be — project support. (IDRC will supply statistics.)

Recently, as part of IDRC's internal reorganization, a discussion has ensued on how most effectively to disburse IDRC funds. Questions have been raised about the effectiveness of short-term project support in isolation from the broader institutional context; interest is growing in modes of integrated support which address larger organizational needs. In any case, consensus is building that IDRC must clarify its concepts of institutional capacity and how best to strengthen it.

[Insert Keith Bezanson quote on capacity development.]

To redress any "capacity gaps" in funded institutions requires taking a close look at what conditions might be constricting performance or output. The framework set out over the following pages is meant to serve as a guide to profiling IDRC's partner institutions so as to generate data that will permit research-based funding decisions. It touches on four main dimensions:

- institutional motivation,
- key forces in the external environment,
- aspects of institutional performance, and
- components of organizational capacity,

and provides important considerations within each dimension whose pursuit should contribute to an in-depth understanding of the institution.

A systematic process of organizational analysis will hopefully help IDRC to target resources to areas of greatest need in selected partner institutions and will result in wiser investments. As time goes on, it could even serve as a means of documenting progress resulting from IDRC's and other donor institutions' investments in capacity building.

In the spirit of partnership, which is a driving force in IDRC's mission and culture, it is recommended that key personnel in IDRC-funded institutions receive this guide, become familiar with the framework, and use it to engage in self-study or to help structure and implement their own formal institutional assessments.

The building of capacity is a complex, problem-solving process, one in which there is no single formula for success. Many approaches can and have helped research institutions in the developing world to gain momentum. Just as there is no one formula for building capacity, the evaluation process itself must be robust enough to capture the emerging reality of capacity in development.

Some of the ideas in this framework (for example, "niche management") are just now being talked about and implemented in North American institutions. They have emerged from the consultant's long experience in both the literature and practice of examining whole organizations, and they are presented here as part of a total package of considerations important to organizational sustainability. Depending upon the specific research organization, it is our hope that IDRC and its partners will extract from this framework that which is appropriate to the institution's stage of development and context.

Key Concepts and Assumptions in This Guide

Performance
The performance of research institutions can be conceived as falling within three broad areas: performance in activities that support the mission (effectiveness), performance in relation to the resources available (efficiency), and performance in relation to long term viability or sustainability (adaptiveness).

Capacity Development
Capacity development is ongoing process by which people and systems, operating within dynamic contexts, learn to develop and implement strategies in pursuit of their objectives for increased performance in a sustainable way.

1.0 INTRODUCTION: IDRC AND CAPACITY BUILDING

1.1 IDRC's Mission: "Empowerment through Knowledge"

For IDRC and its partners in the South, the goal of the development process is empowerment. IDRC assumes an explicit relationship between the generation of knowledge and development, and the Centre annually invests over $80 million in research institutions[1] worldwide to help build and enhance indigenous research capacity.

Each researcher and/or research setting receiving IDRC support is unique and driven by its own specific set of circumstances. Some researchers are within universities, some are independent but have university links, and others are associated with community-based, non-academic centres. One of the Centre's distinguishing policies is that, within Centre program priorities, research institutions and researchers in the South set the agendas and make key decisions regarding which areas of research and which research questions to pursue.

1.2 Who Are IDRC's Partners?

A sampling of the wide range of research organizations receiving IDRC funds

(Information will be supplied by IDRC)

1.3 IDRC and Institutional Capacity Building

Leading researchers and development theorists agree that creation of effectively performing institutions is central to a country's development. The phrase "institutional capacity development" is used within the international donor community to capture the intent of a wide assortment of strategies used by donors to help strengthen Southern institutions. It is widely believed that through building institutional capacity, both the partner nations and the international donor community can obtain good value from investment dollars. Furthermore, focusing on institutional capacity, as revealed by institutional performance, permits investors to measure the cost-effectiveness of investment choices through examining a broad range of performance criteria.

In addition to project support, IDRC has frequently supported the capacity development of its partner institutions by providing equipment, training, and improved management systems. Since the Centre's 1987 review of institution-strengthening

approaches, the IDRC has increasingly moved beyond direct support of research to fund such research-complementing activities as:

- technical training programs
- small grants programs
- procurement of journals
- limited capital development
- administrative and management systems
- sabbatical study leaves
- regional networks and workshops
- consultancies
- information-handling systems
- libraries
- non-research staff development programs
- program/project evaluations
- core grants for operating expenses

Enhancing the capacity of institutions to carry out priority research-supporting functions provides an interesting and potentially important conceptual framework for IDRC investment activities. It holds promise both as a way to fulfil IDRC's mission and as a methodology that can enhance the efficiency and effectiveness of IDRC disbursements.

1.4 Assessing Performance and Capacity

While institutional capacity development is strongly assumed to be beneficial, there has been relatively little systematic analysis of institutional capacity and its growth subsequent to intervention. Organizational capacity is a complex phenomenon involving multiple variables; both the literature of institutional capacity development and the history of evaluation practice are replete with attempts to conceptualize and measure capacity. The methodology for assessing organizations in general and research organizations more specifically remains in early developmental stages, however. Governments of countries including Norway, the Netherlands, Great Britain, and Australia are presently experimenting with approaches to institutional evaluation of the research centres they support.[2]

Clearly, some configuration of the key variables of organizational capacity does make a difference in institutional functioning and performance. Donors need a way of evaluating these to learn the circumstances of where and when to invest.

IDRC and other donor institutions have for decades been conducting program and project evaluations. The fact is, our methodologies and approaches for conducting these evaluations are much further along than are those for conducting institutional assessments.[3]

Institutional performance is of central importance to capacity. Generally, it is the need or desire to change performance that drives people's desires to engage in institutional evaluations. Performance can be conceived as the tip of the iceberg, the fruits of organizational capacity made visible to the outside world. In the case of research organizations, these fruits are the research and training products and services as well as changes within the organization itself, such as its organizational learning and adaptiveness over time. The organization's underlying capacity either supports or impedes its performance; thus, an examination of the performance of funded institutions can be a tip-off to weaknesses (as well as strengths) in underlying capacity.

As IDRC develops a more strategic approach to institutional strengthening activities, proportionally greater resources may be directed to broader forms of institutional support. To direct these resources effectively, IDRC will need to approach the measurement of performance and the diagnosis of institutional need more systematically than it has in the past. In the next chapter we will propose a process for IDRC to undertake in profiling those institutions in which it is considering investing. (Profiling here is used to mean a comprehensive description of the organization, in contrast with an evaluation, in which judgments are made about data generated through the profiling process.) The model is presented as a framework that IDRC program officers and other personnel can use to assess client institutions' performance and to develop a profile of their institutional capacity.[4]

Any diagnostic approach must be sensitive enough to reveal capacity gaps — those institutional deficits that are restricting the output or compromising the quality of research and training activities[5] — as well as those areas progressing well as a result of previous support from IDRC and other granting agencies. The aim of our model is to guide IDRC in identifying issues and collecting information that will be helpful in devising strategies to enhance institutional capacity and performance. It is hoped that the data emerging from this process will be used to enlighten funding decisions and to document any growth in institutional capacity that can be ascribed to IDRC's investments.

Because of the uniqueness of each institution receiving IDRC support, we are not prescriptive in the evaluation framework we propose. The general strategy may be common, but each institution must engage in its own analysis and formulate its own conclusions. The process of institutional evaluation advocated here should further empower those involved by helping them learn about their research institutions and about strategies for supporting them.

* * *

We recognize that IDRC's resources are finite and that the Centre is a relatively minor investor in global development and indeed, within some of its client institutions. However, by initiating a comprehensive assessment of partner organizations (which could include multiple partners) and directing support to areas that could dramatically

improve institutional capacity, IDRC can continue to assume a leadership role in promoting sustainable development. Moreover, by encouraging the process of self-reflection which such assessments inevitably entail, IDRC will help its partners develop into organizations with the capacity for learning.

Notes

1 While we understand the formal distinction between an "institution" and an "organization," the former being an organization that has become an accepted part of the social fabric, nonetheless we use the two terms interchangeably, in more colloquial fashion, to represent any of the research partners receiving IDRC support.

2 Professional evaluators from government, universities, and the private sector from these and other countries recently presented their work at an international conference co-sponsored by the Social Sciences and Humanities Research Council (Canada) and the National Research Council, UK (*Evaluation, Social Science, and Public Policy*, June 1993, Ottawa). Leading presentations from this conference are listed in the Bibliography.

3 In practice, there are many combinations and permutations regarding the shape an institutional evaluation can take, both in content and in methodology. The type of information those in the organization feel they can and should provide revolves around what these internal stakeholders consider legitimate and credible and the extent of ownership of activities. Institutional evaluation models range in depth and complexity and can take many forms. A few examples:

Case 1 The head of a major research institute asks a prominent team of academics to visit the institute and write a report concerning the strengths and weaknesses they can identify.

Case 2 A university professor is asked to conduct a study of the major stakeholders of a research centre to determine whether or not the centre is meeting stakeholders needs.

Case 3 An NGO (non-governmental organization) invites a consultant in to do an on-site analysis with the NGO staff and Board. This entails some advance work by the NGO, a workshop, and a report written jointly by the consultant and NGO staff.

All of these situations involve requests for advice. In each of the cases, learned, trusted, and experienced outsiders will be brought in to provide (or help organization members discover) new insights as to how to improve the functioning or the performance of the research institute. In light of their findings, external evaluators generally make recommendations on a wide assortment of institutional features. The frameworks they follow range from none at all, relying on the expert judgment and observational acumen of the evaluator, to the highly structured.

4 To develop this framework for IDRC, the recent literature on performance and on capacity building was surveyed and several existing models currently used worldwide to evaluate research centres were considered (see Bibliography). The social science literature dealing with the constructs of organizational capacity and performance is quite scanty as pertains to research institutions. In the absence of definitive academic work, we relied more heavily on practical experience and observations to gain insight into the workings and outputs of research institutions. Moreover, Universalia Management Group has carried out organizational evaluations world-wide, for well over a decade, primarily for the Canadian International Development Agency. Our framework reflects what we consider the best ideas and techniques from all of these sources.

5 Examples of specific deficits that could be revealed in a probe of organizational capacity include the lack of ability of investigators to access needed information in relevant journals, inadequate means for researchers to attend international conferences in their fields, an inability to access training in needed research techniques, or inadequate operating funds with which to keep laboratories supplied.

2.0 AN APPROACH TO DEVELOPING AN ORGANIZATIONAL PROFILE

2.1 A Learning Partnership

Institutional evaluations have been described as "processes which use concepts and methods from the social and behavioral sciences to assess organizations' current practices and find ways to increase their effectiveness and efficiency" (Universalia 1993, p.2).

The social science constructs used by IDRC to conceptualize the complex processes of institutional growth and development are "institutional capacity development," "institutional strengthening," and "institutional performance." These concepts are important to IDRC's approach to investing in research institutions. As discussed in Chapter 1, it is essential for IDRC to learn what areas of an institution to invest in (institutional strengthening/capacity development) and what returns from these investments to expect (institutional performance).

For IDRC's purposes, institutional assessments should be conducted as learning exercises for both donor and recipient institutions. They should be designed to diagnose areas of need so as to guide capacity building efforts. In the best sense, the evaluation serves as a reforming process, seeking ways to make the institution stronger and better. A learning model of evaluation goes beyond the summative approach which merely measures the total impact of an organization's programs, products, and services. IDRC's approach ideally integrates these results with the techniques of formative evaluation, in which evaluators become involved with helping the organization become more effective in meeting its goals. Beyond merely observing and collecting data, IDRC would like to work alongside people in the institutions, helping them determine how best to influence the development and performance of the organization.

To have meaning and credibility for the Southern research institution, developing an organizational profile should be a process built in partnership with individuals having intimate, day-to-day knowledge of the institution, particularly those in a position to act on the evaluation results. By evaluating in partnership, the means to understand and strengthen the institution can spring from practical realities and experience. Moreover, those working in the institution stand to benefit from a healthy self-examination. Undergoing an assessment process can be an organizational stimulant.

2.2 No Blueprint for Evaluation

Institutions are normative structures. They are grounded in societies and thus can hardly be understood outside of their contexts. For this reason there can be no specific blueprint for conducting institutional evaluations nor for knowing ahead of time all those issues which bear on institutional functioning. And since institutions are socially constructed, complex systems, neither the means nor the ends of the evaluation process can be fully known prior to implementation.

An evaluation methodology which slavishly relies on pre-determined instrumentation assumes that the social reality of an institution is machine-like, functioning independently of the various environments and stakeholder groups which undoubtedly have a formative influence on institutional performance.

Just as IDRC's personnel must go through considerable learning to know how to work with and relate to certain institutions, so IDRC must be supportive of the knowledge development process inherent in conducting each institutional evaluation; for the process as well as the outcomes will likely be flux. Institutional assessments require experimentation and the continuous correction and adaptation of plans to keep pace with institutional complexity. IDRC's own organizational culture indeed supports such a learning process approach.

2.3 Institutional Evaluation Methodology: Some Considerations

There are many good texts on project and program evaluation, not to mention research methodologies and ways to ensure reliability and validity of data. We do not want to attempt to duplicate that work here without the space to do it justice, so we have annexed a short bibliography of useful sources. These are important subjects, however, and form the foundation of sound institutional evaluations. Thus, while we have incorporated fundamental concepts in this text, we suggest that you look more carefully at the background sources.

(1) Specificity vs. Generalization

There is a strong temptation, when engaging in institutional evaluations, to over-generalize the issues ("All organizations should...") or to apply, blanket-style, the latest prescriptions of the day ("Don't all institutions need programs in Total Quality Management?"). But by nature, each institution is unique, grounded in a particular history and housing a distinctive culture. Each institution's mission is unlike that of any other institution and is designed to serve complex and unique stakeholder needs. Circumstances and needs evolve continuously, thus institutions are never static entities.

The uniqueness of an institution does not of itself defeat or invalidate generalization. It does, however, necessitate the carrying out of analytical groundwork so that a proper understanding of the mission, culture, and context will become a lens through

which performance is viewed. The ideas and concepts dealt with in each institutional evaluation should flow from and reflect the institution's own ideas and its approach to these ideas — indeed the institution's own way of knowing about itself.

(2) Choosing Institutional Issues to Explore

The various conceptual frameworks in use for evaluating organizations suggest diverse issues to explore in the course of evaluations (Kiggundu, 1991; Natural Environment Research Council, UK, 1993; The Research Council of Norway, 1993; Economic and Social Research Council, UK, 1993). While the names of categories or areas differ slightly, many models share similar content, with some more comprehensive than others. At the close of this section we will propose a framework we have developed specifically for profiling research institutions. The framework notwithstanding, it is important to reiterate that the issues inherent in each institutional profile must be institution-specific, and their examination must be negotiated with key insiders so as to meet the needs of end users. Also, choices of issues must be congruent with the limitations of the evaluators' resources and interest, i.e. examining the whole institution may be unfeasible.

For example, measuring the performance of a research institution is a central issue, but little agreement exists as to the meaning of performance or its measurement. Thus we need to develop the meaning of performance for each institution. Fortunately, there are generally accepted constructs (such as effectiveness and efficiency) that can be used as a basis for determining institutional performance. However, specific criteria cannot be determined a priori but must be negotiated — for example, the relative importance of papers published in peer journals, the number of research grants, per unit costs, client satisfaction, the amount of contractual research conducted for clients, the number of patents produced, the amount of external support garnered, the success of those trained at the institution, and so on. Beyond performance issues, organizational capacity issues are similarly diverse and complex.

Finally, institutional issues to be explored are subject to shaping by the data that are available. The lack of valid data can be a constraint to evaluation, and making up data deficits can be an expensive process.

(3) Creating a Credible Design

Because of the complexity of the concepts and issues being discussed and the inherent interest of researchers in questions related to research design, design is an important issue. Institutional evaluations lend themselves to many of the most recent advances in methodologies from the social sciences, management and economics. They are less well served by experimental or quasi-experimental designs.

The most useful designs are descriptive and analytic, incorporating elements of historical time-series analysis, case study methodology, and frequently comparative analysis. They attempt to foster in-depth understanding based on a solid foundation of descriptive data. The challenge is often in data interpretation which can only be fruitful when people believe in the data themselves.

(4) Who Collects Data?

The agents of data collection in the evaluation process are generally (1) peer review, (2) self-study, and (3) external experts. For evaluating research quality, peer review is widely considered the best method. Self-study is a methodology growing in popularity, particularly in the non-governmental organization (NGO) community. Recent work in Canada using on-site analysis has provided both a method and methodology to support institutional self-study. When both these approaches are augmented by the evaluative expertise of outside consultants, the combination can provide a rigour of design and methodology which strengthens and adds objectivity to the exercise.

Evaluation on the basis of experts' assessments is currently the most common method used by higher education and research centres (Teichler and Winkler, 1991); however, it is often not the most effective method for assessing a whole institution in all its complexity. Experts are defined as independent and distinguished peers of the same profession, or administrators who examine an institution or unit with the help of documents and possibly a prior internal report and undertake on-site visits. Criticism of this approach is that it tends to be overly selective in the issues examined, and often ignores what the science of institutional evaluation can contribute. In some fields, accreditation standards, and procedures which rely on visiting panels of outside experts provide thorough and valid institutional analyses.

(5) Sources of Data and Types of Instrumentation

Both quantitative and qualitative data are normally utilized in institutional evaluations, depending on the issues being explored. Sources can be both internal and external to the institution. A combination of qualitative and quantitative data is important, for unless tempered by other measures, quantitative measures can erode confidence in the evaluation process. By weaving qualitative with quantitative information, a deeper understanding of the institution will be achieved.

Certain quantitative indicators currently in vogue are justifiably criticized because they merely skim the surface of performance and are subject to over-interpretation. One example is the practice of counting the number of research papers published as a means of judging output, without considering their influence (as revealed in citation indexes) or their timing (i.e. the point of career of the researcher or the developmental progress of a new research group).

But quantitative data are important. These take many forms, ranging from counts and other descriptive statistics to ratio variables such as measures of unit cost or productivity. All such data should conform to the best available standards of reliability and validity.

Qualitative data has many forms and diverse sources. It includes observational records of the research setting and its ambience, data from interviews and group discussions, as well as written data ranging from letters of clients to formal questionnaires and inventories on the organizational culture. Thus, these forms of data

can be gleaned from individuals inside the institution as well as from peers and clients external to it.

(6) Interpretation of Data

One of the most difficult aspects of an evaluation is making judgments about the data, i.e. determining what it is and whether it is "good" and "valued". In general, it is the research institution which must decide.....what levels of performance are being measured and what is acceptable in their environment. Investors must ultimately decide whether or not the levels of performance which exist (or are potential) are worth the level of investment.

Since there are at least two main institutional interests involved in the institutional evaluation process (IDRC and the research institution) and possibly others, the probability exists that there could be many interpretations arising from the same data. Therefore, it is important to take these potential differences into account at the design stage.

In general, judgments about data are made by using four main decision-making tools: (1) norm reference or benchmarking (using real-world norms to compare data), (2) reliance on experts' opinions, (3) criterion measures (deviation from specific, stated goals and objectives), and (4) measurement of statistical differences (often with the use of tests of statistical significance). Using one or more of these tools, evaluators North and South must interpret the evaluation data collected.

It is ultimately the research institution's responsibility to accept or reject the analysis and judgments and decide whether to commit to making organizational change. IDRC must interpret and react to the data and the institutional response to the data in light of its own institutional objectives.

(7) Institutional Scope and Stage of Development

Institutional assessments typically generate an array of complex information, all of which potentially contributes to understanding the performance and developmental progress of an organization. Clearly, the data must be contextualized and the limitations of both data and process acknowledged.

Data considered in isolation of context can be misleading. For proper interpretation, many results need to be placed into social, political, economic, and historical perspective and screened through the institutional lens. For instance, new institutions differ from more venerable ones in that their normative structures are not yet integrated into the national, regional, or local cultural systems. Some institutions are local in scope rather than international and should be assessed from this perspective. All institutions, whether local, regional, national, or international, will need to have their stage of development considered (as will sub-units within the institution), for it undoubtedly takes time to generate positive results.

(8) Costs: Expectations and Limitations

The expense of a full-blown institutional investment is a major issue. Collecting valid evaluation data entails a comprehensive process which can be difficult, time-consuming, and costly. Without such data, institutions must rely on the perceptions of experts, and the credibility of external people can become a focal issue. There are a large number of trade-off decisions that need to be made by IDRC, the research institution, and other partners in the evaluation. Expectations need to match the scope of the exercise. Trade-off decisions need to be explained if they materially effect the validity or reliability of the data. Limitations should be clearly identified.

2.4 A Framework for Profiling Research Institutions

We have constructed a framework to help IDRC personnel in its efforts to achieve greater understanding of research institutions funded by the Centre. Following this approach will help to clarify important issues and to guide the collection of data that will enlighten decisions about enhancing institutional performance and capacity.

In brief, the framework encompasses the following areas, each of which will be discussed in forthcoming chapters:

Institutional Motivation:
- Mission
- Culture

Forces in the External Environment:
- Political
- Economic
- Social and Cultural
- Technology
- Stakeholders

Performance:
- Movement toward Mission
- Efficiency
- Sustainability

Organizational Capacity:
- Program Management
- Strategic Leadership
- Process Management
- Core Resource Management
- Intra-institutional Linkages

Donors are interested in seeing the clear-cut results of their investments. Thus, their natural tendency is to intersect the life of an organization by focusing on its performance, made visible through products, programs, and services. But before assessing an institution's outputs, it is first necessary to gain an understanding of institutional motivation: its mission and goals, and insofar as possible, its culture. These drive performance from within, and a performance assessment must address how well the organization is fulfilling its mission. Institutional motivation is discussed in Chapter 3, in which we suggest key concepts and potential indicators for use by IDRC.

Key forces in the environment which have a bearing on the institution's performance must be understood as well. These could include the host country's science/technology policy, the level (or lack) of basic infrastructure services such as electricity and water, or pressing social problems in the country which shape action research. The strategic environment is dealt with in Chapter 4.

Performance is seen in the visible outputs of the research institution, namely its research and training products and services. Our framework asserts that performance (P) is a function of the interplay of an institution's unique motivation, (M), its organizational capacity (C), and forces in the external environment (E). This dynamic can be represented in the following formula:

$$P = f(MCE)$$

Ways to approach performance are discussed in Chapter 5.

For those wishing to examine the key components of institutional capacity which influence performance, the complex area of organizational capacity is covered in Chapter 6. Five main areas of organizational capacity are detailed (strategic leadership, core resource management, process management, program management, and intra-institutional linkages) and components within each of these areas are discussed.

Note: Modules for conducting selected aspects of institutional evaluation will be described in a forthcoming series of companion documents derived from this framework. They will be geared for IDRC's use in areas such as policy formulation, risk-assessment, pre-partner check-up, and generating baseline data prior to an intervention. The modules will help delineate approaches to follow for institutional evaluation "on the cheap" as well as for large-scale operations.

Organizational Profile:

- Determine institutional motivation
- Understand the organization's environment
- Measure performance
- Probe key areas of organizational capacity

2.5 A Process for Conducting an Institutional Profile

For the institutional profiling process to become a learning experience for all parties, it is necessary for the key players to create and agree upon an appropriate model at the outset. Components of the profiling process include creating partnerships, developing terms of reference, utilizing a workplan, participating in data collection and analysis, obtaining evaluation feedback, validating the results, and developing action plans. Each is discussed below.

(1) Creating Partnerships

Partners in an organizational assessment initiated by IDRC are, of course, the Centre and the particular research organization. Additional partners might include other interested donors or granting organizations — in fact, any legitimate participant with a stake in the process, including those who might help fund it.

(2) Developing Terms of Reference

Each research institution is unique, with its own mission to fulfil and its own stakeholders to satisfy. The terms of reference (TORs) of each evaluation will vary according to the situation (including the interests of the partners, above) and should be negotiated at the outset between IDRC and those within the partner institution in a position to effect organizational change.

The TORs describe the broad areas upon which the partners intend to focus, and each evaluation will need to define these information needs. For example, will the spotlight be solely on performance? What is the time span for which performance will be considered? Will underlying institutional capacity be considered as well? Which areas of capacity? Who is doing what in the course of gathering data, i.e. what tasks fall to external experts and what might be topics for self-study? Finally, a budget is produced for the evaluation effort.

(3) Utilizing a Workplan

A specific plan should be set in writing detailing the steps of how the terms of reference will be carried out. The workplan is the point at which partners come to agreement and formalize a contract regarding their working relationship. More specific questions are identified, methodologies are settled upon, and values are clarified in the workplan.

Factors to be negotiated include the specific types of data to be collected within each area and appropriate indicators of performance (which are only suggested in this guide and need to be refined and further developed, as befits each situation). It is essential that all parties agree on indicators that are deemed fair and legitimate, otherwise the assessment process will have little credibility or positive potential for reform.

Value judgments will ultimately need to be imposed upon the performance indicators, and these, too, will need to be negotiated. For instance, how much published research constitutes an adequate output? What dollar figures attached to external funds garnered or research contracts are considered healthy?

(4) Participating in Data Collection and Analysis.

Once the types of data to be collected are decided upon and delineated in the workplan, concerns typically arise about the complexity of the information and of the large measure of time and expense it will take to amass and analyze it. Approaches to data collection and analysis are custom-tailored for each institution based upon the type of data that is available and the financial feasibility of the effort, in accordance with the budget. Much can be done internally, drawing on existing management and administrative practices.

(5) Feedback

After the profiling process, transmitting the results of the exercise to interested stakeholders (both within the organization and external to it) is an essential step. Employing multiple media to get the message out is generally more successful than relying on people to read the written report. The main issue is to ensure that those who need to learn the results actually hear the feedback. Effective methods to convey information include formal and informal talks and workshops, which can be ongoing during the profiling process.

(6) Action Plans

Once the profiling process is complete, strategies to address the findings can be incorporated within the organization's strategic planning process. Indeed, they may help inspire it.

3.0 INSTITUTIONAL MOTIVATION

3.1 Introduction

Research institutions, like people, have different rhythms and personalities. In the first place, each has a different purpose, or mission. Some are highly motivated by the opportunity "to do good" while others are driven to perform by other forces, including the personal ambitions of key players. Moreover, each institution has a unique working ambience or climate that is an amalgam of purpose, history, and personality. The organizational concepts that motivate and drive the institution include its mission and internal culture as well as the widespread values and beliefs about the role the institution plays in society.

Mission: Stated and Perceived

An organization's mission is its raison d'etre. It speaks to the questions, Why does this organization exist? Whom does it serve? By what means does it serve them? Those seeking to learn the mission of an organization often find they are dealing with two entities: that which is written down (the mission statement) and that which is conceived by organization members.

The mission statement is the written expression of the basic goals, characteristics, values, and philosophy that shape the organization and give it purpose. It seeks to distinguish the organization from others by articulating its scope of activities, its products/services and market, and the significant technologies and approaches it uses to meet its goals. By expressing the organization's ultimate aims — essentially, what it values most — the mission statement provides members with a sense of shared purpose and direction. The long-term goals enshrined within it serve to inspire the organization's strategic planning and major activities. These goals also form the basis for evaluating organizational performance.

Besides the institutional mission that is formally written down is the perceived institutional mission. Often the latter does not correspond to the stated mission, being out-of-date or even misconstrued. But the perceived mission is nonetheless a powerful behavioral driver for those in the organization. One task of an organizational assessment is to assess the degree to which the formal mission statement is understood and has been internalized by members of the organization, i.e. the congruence of perceived and stated missions.

Mission as Tool

Not so long ago, it was common for mission statements to gather dust on the shelf. They were largely symbolic documents and seldom referred to. More and more, however, organizations have realized the importance of making the mission statement a "living statement." When formulated and used strategically, a mission statement is a powerful tool which communicates the organization's fundamental verities to internal and external stakeholders. Used in this way, the mission statement becomes a driving force of the organization and a yardstick for measuring its accomplishments.

Culture

While the mission statement formally articulates organizational purpose, it is the organization's culture that gives life to the mission and helps make its realization possible. Culture is the sum total of the values, beliefs, customs, traditions, and meanings related to mission fulfilment and developed over the history of the organization that make it unique, govern its character, and drive the organization.

Within the culture resides the organization's distinguishing characteristics. The culture embodies the collective symbols, myths, visions, and heroes of the then-and-now. For instance, culture finds expression in the collective pride (and even embellishment) of the accomplishments of individuals. Values important to the organization are illustrated through stories about past successes and failures; these form a living history which guides managers.

Culture as Motivator

Organizational culture is a powerful motivating force; by embodying the values sanctioned by the organization, the culture frames the boundaries of acceptable attitudes and behaviour and creates a shared ethos. For instance, the culture helps determine the extent to which members of the organization will — and are expected to — extend themselves to fulfil tasks. ("Here, people take up the slack and do what needs to be done to get an important project/experiment/grant application/report finished.") Indeed, the culture can cause individuals to use or to push the very limits of institutional capacity. ("They said it was impossible, but we made it work!") Cultural values express what people believe the organization wants to happen.

When individuals join an organization, besides learning about its formal aspects, they spend much of their time being socialized into the "informal organization," namely, the culture. It takes time to absorb the organizational culture, for it generally cannot be spelled out in a document or directive.

In sum, an organization's culture is the attitudinal and behavioral representation of the mission. Culture helps define its members' attitudes and actions regarding tasks, roles, people, power, and change. It provides a framework through which the organization can acknowledge internal problems and resolve them, and analyze external challenges and meet them.

3.2 Information To Gather To Help Assess Organizational Motivation

Mission

In carrying out an institutional assessment, the organization's mission and the culture that drives the mission are important variables to consider. With nearly all evaluation activities, multiple data sources help improve the reliability and validity of the findings. This is particularly true in gathering data to assess the mission and culture of the research institution. The evaluator's goal is to understand the underlying

dynamics of the organization — the extent to which organization members are motivated to work towards institutional goals and aspirations.

To start, it is important to understand the evolution of the institution as expressed through its formal documents, charter, stated goals and objectives, and plans (strategic or otherwise). Have the mission and goals formally been updated in the recent past? Do organizational members feel included in the updating process? Is there a formal mission statement? Do organizational members know what the mission is? Important organizational milestones also help profile the research institution's developmental progress. Gathering concrete data related to the organization's mission helps contextualize these sometimes abstract concepts.

Obtaining such information helps provide insight into whether or not staff and stakeholders have a vision of the organization that is congruent with the stated mission. At the heart of gathering information about the research institution's mission is attempting to ascertain what drives organization members to strive for institutional goals; thus, closely aligned with the mission is the underlying culture of an institution. Unlike a mission or goal statement which can be written down and analyzed, the culture of a research institution represents the beliefs and values that drive individual members. In this respect it represents the collective unconscious of an organization.

Culture

There is no simple way to gather data on the organization's culture. Some organizational evaluators use survey instruments; others use less formal interview and observational techniques. Regardless of the technique utilized, it is critical to arrive at a full understanding of organizational motivating forces. For example, it is important to understand if an institution is being driven by the belief that it should be staffed by a national or international staff. It is important to understand the extent to which the institution values basic research or community service. It is important to see if administrative rules dominate in the struggle between research productivity and bureaucratic formalities. Clearly, every research institution has its own mission and cultural aspirations. It is the institutional evaluators' responsibility to uncover and analyze these aspirations.

Questions To Consider When Assessing Organizational Motivation

- To what extent is there a clear mission that drives organizational members' behaviour?
- How does the organization's mission relate to the development agency's goals?
- To what extent are the research institution's values compatible with those of its partner institutions and major donors?
- To what extent have organizational members adopted the mission and feel that it is one that they ascribe to?
- Is the mission updated and linked to a set of goals?
- Are the goals appropriate to the mission?
- What are the key values and beliefs that drive organizational members' behaviour?
- To what extent are the senior researchers guided by mission and goals?
- Do new staff embody the mission?

Suggested Data-gathering Methodologies

- Institutional observations by experienced, knowledgeable external observers.
- Interviews of individuals and/or small groups about what drives the organization.
- Surveys which take a reading of culture by having members identify what they perceive as dominant beliefs, attitudes, and values in the organization.
- Scrutiny of selected institutional documents and promotional literature to see how the organization perceives itself and how it describes itself to others.

3.3 Linking The Mission And Culture To Performance And Capacity

In 1982 Peters and Waterman in *In Search of Excellence* reminded us of the importance of the relationship between mission, vision, values, and performing organizations. It stands to reason that an institution whose members passionately strive to improve their work has a higher probability of achieving its goals than one without such committed individuals. As long as its goals are appropriate, such organizations tend to be successful.

In profiling a research institution, judgments need to be made regarding the extent to which a commonly held "mission and culture" is facilitating or detracting from performance. If the mission of the organization is outdated and its researchers unclear about institutional directions, IDRC might deem it appropriate to work with the institution in developing more suitable institutional motivation. In this way, the Centre would go beyond merely assessing culture as part of the institutional evaluation to initiating a culture-building process as a means of increasing organizational health. The intervention would aim to create a culture focused on and appropriately directed by the organization's goals, as reflected in its strategic plan (more will be said about this in the "Strategic Leadership" section of Chapter 6.)

* * *

In IDRC, the prevailing ethos has been to seek out motivated and bright individual researchers and to support them in building their capacity to carry out research. (The Centre has also gone beyond the project mode to support entire departments and institutions, but it has done this far less frequently.) Arising from IDRC's commitment to developing institutional capacity, the Centre is searching for motivated institutions that hold the promise to improve their performance. While support can be provided to help build motivation and capacity, in most institutions, helping to build a culture that supports excellence is a long-term and difficult intervention. IDRC needs to take care in assessing this variable.

4.0 KEY FORCES IN THE EXTERNAL ENVIRONMENT

4.1 Introduction

No research institution can exist in a vacuum; each is set in a particular country and region to which it is inextricably linked. This setting provides multiple contexts which influence how the research institution operates and how and what it produces. Thus, the concept of "external environment" is an important consideration for IDRC as it attempts to understand the research institutions it supports. An analysis of the external environment is an attempt to understand the forces outside the organizational boundaries which are shaping the institution.

Forces outside the research institution's walls clearly have considerable bearing on that which transpires within. Often the external environment provides a facilitating or inhibiting influence on institutional performance. Multiple influences in the immediate or proximal environment form the boundaries within which an institution is able to function; these influences likewise shape how an institution defines itself and how it articulates what is good and appropriate to achieve.[1]

Key dimensions of the proximal environment which bear on the research institution include the political, economic, social/cultural, and technological contexts, the demands and needs of external clients and stakeholders, and relations with pertinent other institutions. Some examples of considerations important to IDRC, when profiling an institution:

Political

At a general level, IDRC needs to understand the relationship between governmental strategy or development plans and the institution. Several specific dimensions of the political context should be scrutinized:

The extent to which government and its bureaucracy supports and contributes resources to the institution. It is imperative that IDRC and other funding agencies know whether significant governmental inputs are anticipated to support increased staffing, maintenance, or other recurring costs typical in research projects. The political context usually entails resource trade-off decisions at the government level.

The extent to which the political system is stable or poised to undergo significant change. This factor is vital; the foreign policy context and its effect on IDRC should also be considered.

Whether the political context of the institution directly involves the legal context. Some research institutions require specific legal status to operate, to receive external funding, and to import equipment in support of research.

Economic

In the economic environment, the institutional analysis should centre on those aspects of the economic system that directly impact the type of project being considered. For example, inflation, labour laws, and opportunity costs for researchers in public institutions directly impact institutional activities. Clearly, a country under a structural adjustment regime or one that is expecting to undergo restructuring presents an investment context which IDRC needs to understand. Countries with foreign currency restrictions represent different environments for research institutions than those without them, for such restrictions have ramifications on many things such as equipment procurement and maintenance. In essence, it is important for IDRC to know how the research institution is impacted by these and other economic forces.

Social and cultural

These forces at local, national, and often regional levels have profound influence on the way research institutions conduct their work and on what they value in terms of outcomes and effects. For example, the mores of each indigenous culture have a bearing on the work ethic and the way in which people relate to one another. Undoubtedly, the most profound cultural dimension is language. The extent to which institutional members can participate in the discourse of the major scientific languages will determine the extent to which research efforts focus inwardly or also contribute to regional and global research agendas. Understanding the national/regional/local values toward learning and research provides insight into the type and nature of research that is valued. For example, the relative priority placed on contract research in partnership with local clients, such as testing products and procedures with indigenous populations, as opposed to sharing information with academic peers internationally, or generating biostatistical data that will shape national or regional policy involves culture-based decisions.

Technology

Both the types and the level of technology in the society give insight into understanding an institution. Research institutions dealing with Western paradigms are dependent on the state of national infrastructure (power, water, transport, etc.); those which concentrate on indigenous research paradigms may have totally different dependencies. Thus, it is important to understand the level of relevant technology in the institutional context and whether such technology is defined by computer literacy or by highly developed indigenous methods of verbal and non-verbal communication. It might also be helpful to include the process by which new technology comes into use, both to understand how difficult it will be to acquire needed research technologies, and to develop an appreciation for society's willingness to adopt the results of research.

Stakeholders

Although research institutions tend to be driven by the research mission and process, all institutions are dependent for their survival on various groups of stakeholders. The stakeholder environment looks those people and organizations external to the research institution who are directly concerned with it. Examples are suppliers, clients,

sponsors, potential target groups, and other research institutions doing similar or complementary work. An institutional analysis seeks to learn the identity of these groups in order to assess their potential impact on the organization. Because of its international interdependent dimension, contemporary research relies on institutional relationships which need to be understood. Thus formal and *de facto* relationships with universities, government departments and agencies and other research institutions both within and outside the country need to be understood.

Influences from these multiple contexts can become major facilitating or constricting forces on the research institution as it works to accomplish its mission. In the extreme, these forces can keep an institution alive artificially, or conversely, thwart its survival.

4.2 Linking Forces to Key Questions

If IDRC is to make effective investments in institutions it needs a full and fair understanding of the institutional milieu and the bearing this has on organizational functioning. Only in this way can IDRC help support institutional efforts to overcome those elements in the environment that may be impeding organizational performance.

The preceding section identified a range of considerations necessary for understanding the external environment and suggested major areas of concern that could be probed. However, it is plain that the amount of data one could gather is enormous. In order to focus the environmental scan, institutional evaluations tend to gather data around four basic questions which cut across the various components of the external environment:

1. What are the major forces affecting the institution?
The major categories of forces described in the previous section need to be integrated into some sort of environmental profile. These take various forms, but whatever the form, the profile should characterize the main forces impacting the institution.

2. How predictable are the external forces that are affecting the institution?
How stable are the social, political, and economic forces? A variety of factors can make the external environment unstable, therefore affecting the quality of institutional performance and the type of investment that IDRC might want to make.

3. How friendly or hostile is the external environment?
Clearly, the more hostile the external environment, the more the research institution needs to respond to it, the more difficult it is to carry out work, and the more defensive the research institution must become. A government that withholds funds, bureaucrats who prevent equipment from being imported, an IMF regime that reduces the purchasing power of staff — each of these directly affects the institution and should be factored in the assessment.

4. How resilient is the institution?

Institutional resilience essentially relies on the autonomy of the institution in its environment. How dependent are the programs on external events and stimuli? Some institutions exist in complex environments in which their autonomy is subject to many forces, while others are less vulnerable. The more externally dependent or reliant a research institution is for its programs, services, and performance, the more sophisticated and capable it must be about managing the external environment.

The institution's reputation is a major defense against such external forces. IDRC should understand the perceptions of reputation held by the major stakeholders. Such groups as the research community, government legislators, government bureaucrats, and granting agencies all have perceptions of the research institution and its outputs. Each group has different criteria and influence, and these diverse "influencers" all contribute to the organization's reputation. Obviously, the stronger the organization's reputation and the more broadly based its support, the more resilient the institution will be regarding criticism of all kinds, including reduction in financial support.

Key Questions

1. **What are the major forces affecting the institution?**
   - Are the major issues political, financial, linguistic, cultural, technological?
2. **How predictable are the external forces that are affecting the institution?**
   - Is the situation as it has been or are there recent or impending changes that will affect it?
3. **How friendly or hostile is the external environment?**
4. **How resilient is the institution?**
   - To what extent do the mission and the programs of the research institution rely on the institution's ability to link to its external environment? In other words, how dependent or independent is it with regards to this environment?
   - How diversified are its reference groups, both quantitatively and quantitatively?

4.3 Data Gathering

Political/Economic Environment

The political environment: Overall, what is the value placed on research by the nation? Specifically, do national authorities support the institution through large-scale support (such as operating funds)? Are decisions about allocations heavily political?

The policy environment: What, specifically, characterizes the country's policy environment in this field, e.g. education, science/technology, etc.? Is an appropriate level of support given to the sector? Does the institution have a focused national role and function and links to national or sectoral programs?

The political bureaucracy: the extent to which government bureaucrats are able to carry out decisions, the basis on which resource allocations are made, and whether the bureaucracy facilitates or retards the development of the institution. For instance, are the rules which govern the institution so stringent that donor participation is difficult or impossible? (For example, must money from outside the country be administered through the country's External Affairs Department rather than go directly to the institution? Does the country serve as gatekeeper of technology, inhibiting the transfer of equipment from one country to another?)

Data about the legislative system and its effect e.g. whether the country's legislative system is stable and functional, whether the laws that govern relationships function rationally, and whether conflict is arbitrated in a reasonable way, freeing individuals from extreme corruption or conflict. What are the wage laws and salary structures which directly affect the institution? For example, are university salaries tied to teacher or civil servant salaries? Do wage rates differ significantly between public institutions and private organizations?

The history and amount of IDRC support and the goals of this support; details of the amount and nature of other donor support: Who, external to the country, is investing in the country, this type of institution? Is there potential for coalitions or joint funding of projects by donors? Why has IDRC chosen to support this institution? What is the present mode of IDRC intervention: (project support, multiple projects, other)? Why was this mode of intervention chosen? What are the goals of IDRC support?

Social/Cultural Environment

Do cultural values support the free intellectual exchange of ideas? Are they positive towards the value of the area of study and the work produced by the institution, for example, in producing scientific knowledge? Information pertinent to women's studies? Are the country's human resources adequate to support the institution's work: qualities of the labour pool; demographic trends?

Stakeholder Environment

Each of the institution's stakeholders has an interest in expecting/demanding that the research institution make satisfactory progress in carrying out its mission. Strategic decision makers in the institution must understand the specific demands that each stakeholder group will make on the organization.

Awareness of the market segments served and the products/services produced to serve them comprises a "reality test" for the institution.

Institutional Environment

Does the organization adequately attempt to understand other institutions in the environment (local, regional, national, international) with a bearing on its niche? (For example, the potential for losing employees to similar institutions offering better salaries; the potential for constructive collaborations and other partnerships that might enhance output.)
Are adequate networks and systems in place linking this institution to other institutions so as to enhance/support research or training products/services?

Technological Environment

Is the technology needed to carry out the institution's work supported by systems in the wider environment (e.g. maintenance)?

What is the process by which new technology comes into use in the society? Does this make it difficult to acquire needed research technologies? Does it hinder the ability of the society to adopt the results of research?

Data Gathering Methods and Sources

Obviously, the external environment within which research institutions operate is large and complex, and culling data from this environment requires the ability to separate the important from the less important. It is critical that the institutional assessment capture the impact that the environment is having on the performance, capacity, and mission of the institution.

The first place to search for pertinent data is an existing "environmental scan" of the institution. As part of strategic planning, it is common today for institutions themselves to undertake environmental scans. If a recent scan has been carried out, this will be of great assistance. If not, the evaluators must attempt to identify, with the assistance of key institutional members, the external (social, political, economic, etc.) factors that are most supportive as well as most troubling to the institution. These factors will form the starting point for discussion and analysis.

Gathering Environmental Data
Some suggested methods

Ask for existing environmental scans for the institution.

Obtain scans from related institutions in the country involved in research.

Look at recent studies by the World Bank and other donor institutions.

Interview and hold workshops with key informants about the external factors influencing the institution.

Read contextually (newspapers, magazines, historical analysis, etc.)

Interview key informants outside the institution to understand how the external environment affects internal operations.

Ask those involved about key legal and governmental regulations that influence the institution (patent laws, development plans, labour codes, etc.)

Collect and analyze data on the evolution of government and donor support.

Ask researchers about prevalent values regarding learning and research.

Analyze development plans and key policy documents.

Collect and analyze data on resource allocation trends for R&D in the country and region.

4.4 Relevance To Capacity And Performance

Both performance and capacity are heavily influenced by the external environment.

Performance is contextual, for it is the values of key institutional stakeholders that determine the short-term and long-term reputation of the institution. For example, government officials who see little evidence of immediate impact might view the research institution quite differently than does the research community which applies international scientific norms as their referent. Local community residents might regard the institution as a helpful resource, but the scientific community of the country or region might find the work out-of-date. Understanding the external environment therefore helps to contextualize the understanding of performance.

With regard to capacity and its development, the context is an intervening variable in many management choices. The usefulness of a particular organizational strategy or structure is directly influenced by the institution's external environment. The extent to which resources are available is influenced by the external environment, as are the internal policies and procedures deployed by an institution to control these resources.

The nature and type of inter-institutional linkages are similarly affected. Ultimately, the external environment influences the choices an institution makes regarding its programs, types of outputs, and the standards of judgment that are appropriate and acceptable to measure its progress in fulfilling its mission.

Notes:

1 Of crucial importance to research organizations is keeping up with advances in the pertinent fields of research. This means having access to wide-ranging sources of up-to-date information within each discipline. New information and technology of importance in the field bear directly on the institution's program management, from the choice of research topics to pursue to the types of training and services the institute will provide.

IDRC has been particularly strong in helping institutions capture information from beyond their boundaries. The Centre has vigorously supported libraries, information systems, and now, institutional networks and linkages to achieve this purpose and enable partner institutions to use scarce resources wisely. More on this subject is found in the section on "Institutional Linkages" in Chapter 6.

5.0 MEASURING INSTITUTIONAL PERFORMANCE

5.1 Introduction

In our framework for profiling a research institution, overall performance is seen as a function of the interplay of the institution's unique motivation, its organizational capacity, and forces in the external environment.

Over the past 30 years there have been many attempts to define performance generally and to apply performance concepts to various organizational types. A number of ideas emerge from the organizational performance literature. First, in all organizations, performance relates to organizational purpose. Secondly, performance is not limited to the purpose of the institution; it also needs to reflect achievements relative to the resources used by the organization; and thirdly, performance must be considered within the environment in which the institution does its work. The first component reflects the organization's mission; the second component reflects how well it manages as an organization relative to its resources, and the third, its sustainability within the context of external support it receives.

With research institutions, obviously the quantity and quality of research produced is fundamental to the achievement of the mission. But performance of a research institution must also encompass aspects of organizational functioning that are the necessary underlying conditions for researchers to be productive. To apply traditional evaluation terminology to research organizations, institutional performance must integrate the concepts of "effectiveness" and "efficiency." That is, the organization must be able to meet its goals (effectiveness) and to do so with an acceptable outlay of resources (efficiency). Vitally important as well, particularly to IDRC and other Northern granting agencies, is the Southern research institution's sustainability over the long term (adaptability). The institution must be able to develop and implement strategies which will ensure research performance over extended periods of time. To do so, its activities and services must remain realistic and connected to stakeholder needs. For when an organization's services and activities are not relevant or are too far-reaching and costly, institutional survival is at risk.

In summary, the performance of research institutions can be conceived as falling within three broad areas: performance in activities that support the mission (effectiveness), performance in relation to the resources available (efficiency), and performance in relation to long term viability or sustainability (adaptiveness).

5.2 Performance In Moving Towards Mission

A research organization's performance is made visible through the totality of the research (and sometimes training) activities it generates in pursuit of the mission. These outputs and effects are the most discernible aspects of institutional performance. IDRC and others who support the endeavours of research institutions are naturally interested in these outputs, which are seen as the tangible results of their investment dollars.

Ideas associated with the performance of research organizations in fulfilment of their missions vary considerably. Each interest group or stakeholder may have a totally different conception of what counts. For instance, scholarly researchers might define performance in terms of the number of refereed articles, whereas senior administrators might define performance as the quantity of financial resources brought into the research centre through grants. Donors might define performance in terms of the beneficial impact of findings or activities on indigenous groups. Furthermore, researchers themselves seldom speak with one voice on such matters. Are applied research reports equivalent to refereed articles? Is an influential applied journal as valued as a prestigious theoretical journal? Is a national journal as good as an international journal? How much do conference proceedings count? Are publications valuable in themselves, or should we only consider them in relation to citation indices by other researchers?

Although few institutions have performance data readily available about their research and training programs and services, it is not difficult to develop mechanisms and approaches for gathering performance data about these outputs. The performance data used by institutions can take the form of input data (e.g. the number of people or students served), process data (e.g. the number of research projects in progress), output data (e.g. the number of articles accepted for publication), or impact data (e.g. the number of lives saved by the application of a particular medical technique).

While it is relatively easy to develop an information system to help research institutions assess their performance, it is far more difficult to obtain consensus on the merits of particular performance indicators. It is more difficult still to arrive at value judgments regarding acceptable levels of quantity and quality for each performance indicator. At issue is, how does the specific research institution define research performance? What does the research institution value? The latter is a fundamental question, and one whose answer is no less valuable than is the quest for understanding. The process of addressing it is the process of values clarification indispensable to institutional capacity development. It is often linked to an institution's search to clarify its mission.

5.3 Performance In Relation To Efficiency

In today's economy, research institutions must not only be able to provide exceptional research and teaching services, but they must also be able to provide these within an appropriate cost structure. Tight times have meant that performance is increasingly judged by the efficiency of the institution, for example, in terms of cost per service or the number of outputs per researcher (publications per person per year, average value of grants per person, etc.). Indeed, even in this era of team-based research, some very small research units have repeatedly made outstanding contributions within their narrow niches. Whatever the overall size of the unit, "Performing" institutions are viewed as those which provide good value for the dollars expended.

5.4 Performance In Relation To Sustainability

Institutions in any society take time to evolve and develop, but over time they must institutionalize in ways that consolidate their strengths. While all institutions ultimately face internal and external crises, the survivors are those that succeed in adapting to changing contexts and capacities. Partly because of their relatively short institutional histories, and because of widely differing environmental contexts, research organizations in the South have varied dramatically in their ability to become institutionalized in society. Moreover, no institution is protected from the vagaries of being out of date, irrelevant, and subject to closure. In this volatile context, institutional performance relates to the ability of the institution to keep its mission, goals, programs and activities aligned with its key stakeholders and constituents. Issues of institutional survival are broad in scope, ranging from the reputation of the organization in the wider community to the effects of the organization's programs, services, and their management on staff morale.

Typical Indicators Of Performance In Research Institutions

Movement toward Mission

- number of publications accepted by refereed journals
- number of citations (considered the best indication of the work's influence in its field or related fields)
- number of patents and other intellectual property
- software developed
- collaborative links with other researchers
- external funds/contracts received
- number of people served (for action research)
- health, educational benefits
- peer ratings of relevance of research
- conferences attended in which papers/posters were presented
- client satisfaction
- social/economic effects (as per mandate)
- relevance of work to national development
- relevance of work to field
- relevance of services to users
- number of students supervised
- number of trainee researchers supervised
- origin of students and trainees (country, institution)
- links with higher education institutions
- number of publications in which students are co-authors
- students'/trainees' assessments of training environment

Efficiency

- amount of external funding received
- comparative institutional costs for research, training, and other services
- overhead/program dollar ratio

Sustainability

- support earmarked for professional development
- level of the quality of working life
- financial risk
- institutional innovation and adaptiveness (appropriate changes to research questions, methodologies)
- institutional reputation amongst key stakeholders

5.5 Measurement

Four major questions permeate the performance literature and should be considered by IDRC when formulating an approach to evaluating its partner institutions:

1. What areas of performance should be measured?

In the framework implicit in this section, performance of a research institution should be assessed in three domains: research performance, efficiency performance, and sustainability performance. Identifying those performance areas in all three domains which are key in a particular institution is a crucial step for both IDRC and the partner institution at the outset of the evaluation process.

Organizational goals and priorities provide the starting point for performance measurement related to research. Performance indicators can and should include both quantitative and qualitative measures. A matter of some concern is that certain institutions have exclusively adopted numerical measures (e.g. the number of publications in peer- reviewed journals, the number of citations per author, the amount of money received by the organization for contract research, the number of patents earned, the number of students receiving graduate and post-graduate training, and so on.) In IDRC's view, qualitative judgements by stakeholders on the impact of research production are equally vital.

IDRC also requires data on the management of research institutions — the efficiency domain. There are many approaches to such analysis. They range from financial audits to surveys of organizational culture.

As well, there should be some analysis of institutional sustainability and its effectiveness in adapting to changing conditions. As noted above, organizational priorities, either written or inferred, transcend the individual programs and services being provided and include broad issues vital to institutional survival. The extent to which actual measurement of issues on this dimension is a matter for negotiation.

2. How should performance be measured?

Once "what to measure" has been decided, how to do the actual measurement is the next consideration. Which components within various performance areas should be measured, what kinds of data are appropriate to collect, and how should it be done? The current consensus of the international evaluation community is that multiple sources of information including a mixture of qualitative and quantitative data should be employed in order to obtain an adequate and valid understanding of performance.

Some areas are more difficult than others to measure: for instance, while productivity is relatively simple to assess using numerical data, more abstract performance concepts such as creativity or adaptiveness elude clear-cut measurement. (Their measurement is not impossible, however, as observable qualities can be delineated for both.) The costs of various measurement methodologies is another crucial

consideration. Performance measures are politically sensitive and must be open to careful scrutiny. Surveys can be laborious and expensive to construct and administer.

3. When should measurement be conducted?

Timing is an important consideration in evaluating research institutions. Conducting research is, by nature, a slow-moving, laborious process; if done well, the results of research should have lasting impact. But practical considerations often dictate short-, medium-, and long-term measurement strategies. These environmental needs do not alter the fundamental character of the research endeavour, however.

Historical trends, be they within the institution as a whole, in the research group, or in the career of the individual researcher, all influence research output. When measuring the present (i.e. recent) performance of research centres, it is important to consider the historical context of performance for each of these entities. A sketch of the evolutionary progress of the institution or of individual sub-groups within the institution or of the career of the particular researcher can be revealing. Considerations such as whether any of these is in nascent stages, or whether significant milestones have occurred in the institution or in the field have a bearing on output; sensitivity to these contextual issues will enable more thoughtful interpretation of the work.

On the more mundane level (but also essential for practical reasons), the timing of the institutional assessment process should respect built-in institutional cycles, e.g. it should not be conducted at a time of the year when grant applications are due, when staff are unavailable due to vacation season or attendance at conferences, and so on.

4. What standards ought to apply?

Once data are obtained, issues of performance standards arise, namely, what constitutes "good" or "acceptable" research and training activities? For a fair evaluation of specific research organizations, the level of acceptability for each performance indicator should be negotiated case-by-case between IDRC and the partner organization. Abstract norms arrived at in isolation from real environmental and historical events are inappropriate to apply to Southern research institutes.

Over time it might be useful for IDRC and other international granting agencies to develop a data base of normative information about the performance indicators and standards that a wide variety of research centres worldwide have decided to adopt. For example, what do they consider reasonable expectations for publications? For non-core project funding? For training researchers?

Such cumulative, normative data would perhaps help future evaluators make judgments on their data. Unfortunately, the state of our knowledge presently causes us to rely on expert judgment as the primary tool for setting standards.

Sources Of Data

Much pertinent information may already exist in the research institution in one form or another, and all potential sources should be mined. Some suggestions of where to look:

- institutional documents: financial statements, annual reports, strategy documents, and so on
- bibliographic citation analyses
- reviews of research by scholarly groups
- interviews of key informants that affect institutional activities
- surveys appraising the institution's reputation
- CV's of staff

5.6 Importance To Capacity

Performance and capacity are inter-related concepts. Institutional performance arises from the use of capacity. Assessing performance also leads us to areas where capacity needs building (the subject of Chapter 6).

It is important that institutional performance be viewed as more than simply the sum of institutional products. Performance should have a synergetic quality. In other words, the institution should ideally give back to society outputs whose value is greater than the total resources invested in the institution. We organize institutions to realize these gains, and we try to hold the institutions accountable for providing added value to the investments made in them.

* * *

Assessment of performance is always occurring informally, whether or not the institution formally engages in performance assessment. Performance assessments are also driven by various stakeholders and clients. For instance, governments decide to increase or decrease funds to a research institution in part because of its perception of the institution's existing or potential performance. Clients decide to use or not to use the services of a research institution because of their own assessments of its performance. Stakeholders often either implicitly or explicitly link funding to performance and perceived capacity.

By making the informal formal, IDRC, in addition to guiding its own funding strategies, is supporting the development of more transparent and open institutions. And by approaching an institutional profile as a learning process, conducted in partnership with its funded institutions, IDRC is fostering their sustainable development.

6.0 ORGANIZATIONAL CAPACITY

6.1 Introduction

Capacity development is an ongoing process by which people and systems, operating within dynamic contexts, learn to develop and implement strategies in pursuit of their objectives for increased performance in a sustainable way (Universalia, 1993). Since 1970, IDRC has stressed that investment choices should focus on building the capacity of indigenous organizations and institutions to solve their development problems. Over the past several years, a consensus has emerged within the development community around this point. In this context, capacity development is an empowering concept; it leads to investments in people and their institutions which enable them to define and resolve their own development issues.

To date, IDRC's approach to building organizational capacity has been primarily that of project support. In essence, it has been a strategy of identifying an individual or small group of individuals with the potential to make a significant development contribution and building their capacity by funding their specific research activities. IDRC has been relatively successful at this type of capacity-building, but the Centre has recognized for some time that this mode of investment is too narrow to ensure sustainable institutional development. IDRC's recently defined strategies for the 1990s calls ("Approaches to Strengthening the Institution") for a more focused and holistic effort to build the capacity of its funded partners to insure institutional development (refer to Approaches to Strengthening the Institution"???)

The experience of IDRC and other agencies indicates that creating wider change at the organizational level is conceptually and practically a more difficult and complex undertaking than is project support. At the centre of this complexity is our embryonic understanding of institutions and of building organizational capacity.

Over the past several months, in developing a framework for IDRC's use in profiling institutions, we have reviewed the Centre's experience with building research institutions as well as the broader literature on research institutions and the more generic organizational and institutional development literature. Our review has indicated that a framework could be created based on five interrelated areas of organizational capacity. These areas would encompass most of the analyses and interventions within the literature on capacity building. Within each of these five areas are specific components that give specificity to the general conceptual area:

Program Management:	Planning, Implementation, Monitoring
Strategic Leadership:	Governance, Structure, Strategy, Culture Management, Niche management, and Core Resource Acquisition

Core Resource Management:	Infrastructure, Human Resources, Technological Resources, Finance
Process Management:	Planning, Problem-solving, Decision-making, Communications, Monitoring and Evaluation
Inter-Institutional Linkages:	Networks, Partnerships, External Communications

It is important to note that these components range in importance for each institution. They are meant to be illustrative and to guide the process of learning about a research centre.

6.2 Program Management

"Program" is defined as the research institution's research, training, and service activities and outputs. Program management is the ability to develop and manage all of the organization's research, training, and service programs in a way that supports its mission. Good management sees to it that proper weight is given to each facet of the mission. For instance, if both research activities and training indigenous investigators are stated as the institution's twin priorities, both should receive adequate resources.

The program management area is vitally connected with all other areas of organizational capacity, for it is in service of the institution's programs that these other functions are engaged (namely, strategic leadership, core resource management, process management, and intra-institutional linkages).

The outcome of good program management is good performance of the institution's research, training, and service program activities. This result is critical, for the results of program performance are highly visible outside the organization and are often the major outputs focused upon in evaluations (see Chapter 4).

NOTE: This section is to be developed with the assistance of IDRC to reflect the management approaches of partners in southern institutions as well as those employed by the IDRC auditing division and ISSD. The beginning of a framework for conceptualizing program management is suggested below:

THREE COMPONENTS OF PROGRAM MANAGEMENT
Planning
Implementation
Monitoring

	RESEARCH	*SERVICE*	*TRAINING*
PLANNING	*Determining appropriate research topics* *Finding/creating opportunities for external funding.* *Managing the grant proposal submission process*	*Finding/creating local teaching/resource opportunities* *Managing the proposal writing and submission process for contract research*	*Structuring teaching/training settings and experiences*
IMPLEMENTATION	*Research production* *Research dissemination* *Research use*	*Contract research production* *Teaching/training resource activities*	*Ongoing conduct of teaching/training activities*
MONITORING	*Research feedback* *Financial management of research programs and projects*	*Research utilization* *Research feedback*	*Determining adequacy and appropriateness of courses and/or training activities*

6.3 Strategic Leadership

Strategic leadership is the process of directing the efforts of the organization's internal members and external stakeholders towards organizational objectives. It has been said the "at the basis of leadership is the inspiration of followership." For institutions, strategic leadership implies that a followership has been developed both within and outside the organization.

Strategic leadership refers to all those activities that set the course for the organization and aim to keep it on course, in service of its mission. It encompasses all the various ways and means used by senior managers to inspire members of the organization to perform, at the same time that the institution is attempting to adapt to or buffer external forces. Strategic leadership is associated with risk, with vision, and with ideas.

Five Components of Strategic Leadership

- Governance
- Structure
- Strategy
- Culture Management
- Niche Management
- Core Resource Acquisition

Leadership can also exist at many places inside the organization, both formally and informally. Formal leadership is exercised by those appointed or elected to positions of authority; informal leadership is exerted by persons who become influential because they possess special skills or resources valued or needed by others. As long as the vision is congruent with action, the more broadly that leadership roles are assumed by members of the organization, the more vibrant and creative the organization.

Developing a strategic plan is leadership, but so is coming up with a new approach to investigating a thorny research problem. Helping the research institution decide to organize the library's data accessing system is a form of strategic leadership. Initiating research collaborations with individuals from within and outside the institution is leadership, and within these collaborations, leadership is flexibly assumed by those who stand to make the greatest contribution to or gain the most from the task.

The outcome of strategic leadership can be summed up as aligned direction and action. Under strategic leadership, the research centre appears to be going places, changing appropriately, adapting, and following a path that makes sense to its members and to those external stakeholders who fund the institution or confer reputation. Viewed from the inside, the strategically led organization is secure in the

knowledge of where it must go. From the outside, the institution appears sound and inspires confidence; people want to be associated with it.

Analyzing the strategic leadership function can be done by exploring four components or subsystems: governance systems, organizational structure, strategic management, and niche management. These are detailed below.

Governance Systems

The board of directors and constitution provide the legal and policy framework and direction for institutional functioning. Governance can be conceived as the point at which the external and internal environments meet. A good board of directors has its finger on the pulse of both environments; it assesses whether or not institutional initiatives are supportable, whether they meet development goals nationally and/or regionally, whether the institution is responding appropriately to important forces and trends in the field of endeavour and the wider environment, and whether it is meeting the needs of those it serves.

At the governance level, policy issues are discussed and resolved in a timely manner, institutional policies are set, and capital and operating budgets are approved. The power and politics of the organization inevitably reside here, for the governing structure is often a forum for airing internal demands and resolving them with funding realities. Strategic direction and priorities, stakeholder representation, equity, external environmental forces (both positive and negative), as well as core resources are all part of the concerns of the governing structure.

In research institutions, the governing body must strive to create a framework that allows experts within the organization to have the resources they need to remain on the leading edge of their fields. For instance, the board might approve the organization's acquisition of a new technology by affirming its supportability in terms of relevance to the core mission and to the demands and needs of constituents. In the case of a research institution involved in developing vaccines, the board might approve study leaves abroad for staff to become trained in the techniques of molecular biology.

Key Questions About Governance

Does the governing structure both clarify and support institutional direction?

Does the charter provide an adequate framework for carrying out the mission of the institution? Is it adequate for dealing with the external forces challenging the institution?

Does the governing body scan the external and internal environment in order to understand the forces affecting the institution?

Do they respond appropriately to important environmental trends and influences, be these social, political, or economic? For instance, are both quality and equality issues reflected in the minutes and discussions? Does the governing structure support principles of equity?

Does the governing structure operate effectively and efficiently?

Organizational Structure

The structure of an organization is the system of working relationships arrived at to divide and coordinate the tasks of people and groups working toward a common purpose. Most people visualize an organization's structure in terms of the familiar pyramidal diagram. However, structure is much more than this. It involves the division of labour including roles, responsibility, and authority, as well the coordination of labour into units and inter- and intra-unit groupings.

The task of creating appropriate and manageable work units or departments has challenged managers and students of organizational development for decades. When Weber defined "bureaucracy" (reference), he believed his model represented the ideal organizational structure; we now realize there is no magic in determining how to organize. The ideal structure is, in fact, the one that best fits the situation. At issue is whether or not the organizational structure supports or inhibits the capacity of the organization to perform its work.

In looking at the structure of a research centre, we are interested in the ability of the departments or other groupings to understand their roles in the institution and the extent to which they feel they have the authority to carry out their roles and are accountable for their work.

Coordination is the process of linking specialized activities of individuals or groups so that they can and will work toward the same ends. The coordination process helps people to work in harmony by providing systems and mechanisms for understanding and communicating one another's activities.

In research perhaps more than in any other endeavour, where innovation and productivity are key, interdisciplinary teamwork is becoming a competitive advantage. Entire networks are being formed in which the best minds collectively tackle difficult

research problems, each contributor bringing his or her special perspective and expertise. The ease with which the research institution can coordinate the development of interdisciplinary approaches to research projects is an indicator of organizational health.

Many variables influence organizational structure. History, organizational goals, strategy, governance, funding (and other) pressures from the external environment, the specific fields of research, and technology all play a role in influencing the type of structures that exist.

Another important structural consideration is the manner in which authority is shared. Institutions range from the decentralized to the centralized, from the highly participatory to the dictatorial. In assessing the organization's functioning, determining which model is better becomes a matter of judgment, for in actual fact, the appropriateness of the model depends upon the situation and context.

With regards to strategic leadership, structure must be assessed to see if it is facilitating or hindering movement towards the mission and goals.

Questions Typically Asked In Assessing Organizational Structure

Are the institution's mission and goals supported by its organizational structures?

Are roles within the organization clearly defined, yet flexible enough to adapt to changing needs?

Are departmental lines or divisions between groups crossed easily, particularly in cases when collaboration would mean an improved product? Or are departmental lines jealously guarded, serving as an impediment to collaboration?

Is structural authority used to further issues of equity?

Does staff have linkages with/access to other researchers and units in the organization that are important to their work?

Are there coordinating mechanisms which facilitate access to other researchers or research units within the organization?

Can staff create important coordinating units with ease?

Are efficient means for coordinating staff and units fostered and encouraged?

Are there clear lines of accountability, both individual, group, and organizational?

Do people have the authority to set agendas that support accountability?

Are there efficiently functioning work groups?

How centralized (vs. de-centralized) is decision-making? If highly centralized, does this model appear to be having negative consequences such as impeded productivity, low morale, etc.?

Who bears responsibility for performance? Does this structure makes organizational sense and facilitate the work?

Strategy

Strategy refers to the pattern of calculated responses to the environment, including resource deployments, that enable an organization to achieve its goals. Strategic planning refers to formulating and implementing activities that lead to long-term organizational success. A written formulation which documents the strategic planning process is the strategic plan. This sets out the goals, priorities, and tactics that a research centre wants to employ to improve its performance.

In a research organization, strategy is not a one-person or one-unit (e.g. the planning department) activity. Rather, it is generally a participatory process that helps engender shared commitment to institutional directions. While the senior managers are

responsible for facilitating strategy development, all board and organization members need to work toward making the research institution's strategy a reality.

Strategy formulation begins with identifying and/or clarifying goals and objectives and determining methods for reaching them. Questions fundamental to the strategic management of research organizations are, What are the major services that we offer? Who are our clients and what services do they want us to provide? Do the researchers agree with institutional direction?

Particularly in public organizations, each element of a strategy (objectives, activities, and resources) is constrained by political, social, technological and economic environmental variables. For instance, in certain research institutions, the science/technology policy of the government is a vitally important variable. Strategic planning typically includes an analysis of both the opportunities and constraints presented in the environment. Mission is reviewed and modified as necessary, as are priority objectives.

Strategy requires matching resources and activities to objectives and, if required, scaling activities to fit resource constraints (human, financial, technological, infrastructure). For strategies to become working documents they need to be communicated, explained, processed, and revised according to feedback from stakeholders, both internal and external.

The development, implementation, and monitoring of institutional strategies can emerge either centrally or decentrally. The issue for the institutional evaluation is whether or not a realistic strategy is helping to guide decisions throughout the organization.

Questions Typically Asked in Assessing Strategy

Is there an institutional strategy?

Is it known by the board of governors, senior managers, researchers, and other staff?

Is the strategy generally accepted and supported in the organization?

Has the strategy helped clarify priorities, thus giving the institution a way to assess its performance?

Is it used as a way of helping to make decisions?

Is the strategy an impediment to capacity or improved performance?

Is the strategy one that supports issues of equity?

Is there a process for clarifying and revising the institution's mission and beliefs, for working on its goals, and for understanding its clients and users?

Is there a process for scanning the environment — social, political, technological, economic — in order to consider potential threats and opportunities?

Is there a process for monitoring application of the strategy?

Is there a similar process for understanding client and stakeholder requirements and changes?

Management

Niche management entails carving out a particular area for the organization in the "marketplace" that matches the organization's particular expertise. It means cultivating those clients vital to organizational survival and making sure that the organization's products and services meet their needs.

In today's global society, the success of a research institution is in part predicated on being able to carve out a unique role within the society. In research centres, the institutional niche emerges from the organization's areas of excellence and from developmental need. The niche stems from the role of the research centre in the society and the manner in which it complements other institutions. A research centre's niche helps clarify where it stands in relation to the constellation of other local, regional, national, and international organizations. It helps both the institution and funders of institutions to determine the level and types of funders that can help build capacity. The latter decisions occur through formal and informal negotiations between internal members and external stakeholders.

Niche management is an organizational function that forces managers to look beyond internal matters to consider the wider environment and the broader issues of our time.

If this function is neglected, the organization's ability to adapt to the changing global situation will be severely limited.

In the private sector, the marketing function evaluates the organization's image or position in the marketplace and reaches strategic decisions concerning target markets, services, and products. This model is not so far afield for research institutions, which also depend upon a client system for support, namely government funders, industrial contractors, and the general public (i.e. taxpayers).

Developing the institutional niche takes strategic leadership. If a research centre wants to serve its local community and be noted for this service, the research centre must organize itself and focus on the requirements of implementing this target. Some years later, the needs of the local community might change; a new niche will then need to be found and a new consensus developed about its appropriateness.

Within the area of niche management, both internal and external communications are important. For a research organization, good external communication stimulates awareness of and interest in the services, products, and capabilities of the institution. In most environments, clear communications about the research centre's niche are vital to how the centre is perceived and how its performance is judged.

Questions Typically Asked in Assessing Niche Management

How do potential clients or customers know or find out about programs/services?

Is equity served by this niche? (e.g., are women and other under-represented groups served by this niche?)

Has the organization defined a marketing program in which the philosophy, mission, goals, and resource strengths of the institution are matched with the needs of the market groups selected for service?

Does the organization seek information about the products and (research) services that clients want?

What promotional information about the research organization is generated and communicated to stakeholders?

Does the organization appear to have sufficient financial support from outside the institution for its products and services? If not, could a lack of aggressive marketing or promotion, resulting in a lack of awareness, be the cause?

Does the organization seek a larger share of customers, clients, funders, or other constituents through the collection of systematic client and product information market research?

Core Resource Acquisition

Finally, strategic leadership entails responsibility for institutional survival. A central issue in the survival of an institution is acquiring core resources in the vital areas of funding, infrastructure, technology, and personnel. Leadership in this domain means anticipating and capitalizing on opportunities in the external environment that might yield or support needed resources. It also means predicting threats to institutional resources and intervening (typically, politically) to insure that institutional performance and survival are safeguarded. Typically, this level of leadership transpires between the senior executive of the institution and the governing body.

To illustrate this point, one must understand that there are always threats to institutional survival and performance. For example, labour laws that pay researchers low wages contribute to high institutional turnover and erode the ability of research departments to keep a critical mass of skilled staff. Another chief environmental threat is the elimination of lines of research funding by the government granting system, by private funding sources, or by international donors supporting core institutional activities. This fact of life may prevent hiring an exceptional person who could contribute excellent work in service of the organization's mission.

Core resource acquisition entails constantly being on the look-out to create opportunities that will augment the institution's resources. This can be accomplished through forming new alliances and partnerships and by forging new ways of thinking about generating resources.

Questions Typically Asked in Assessing Core Resource Acquisition

Is the governing body active in acquiring and protecting core resources?

Does the institutional strategy identify the opportunities and constraints regarding core resource areas?

Is the institution appropriately political in its actions to secure core resources?

Do senior board and management officials understand their roles in core resource acquisition?

6.4 Core Resource Management

Whereas strategic leadership sets the broad parameters within which an institution functions, including the acquisition of core resources, the core resource management function provides the details of planning and control systems that operationalize this leadership. We have categorized institutional resources into four major components: infrastructure, human resources, technological resources, and finance. These are the resource areas that need to be institutionally managed, in that they require systems for their planning, control, and proper use.

Whether a government or a private sector enterprise, whether a self-contained institution or a department within a larger institution, the research entity needs well-managed resources. Throughout the conceptual and evaluative literature on research institutions, studies point to the lack of internal management to ensure that existing resources are utilized efficiently. Stories about poor resource management abound: equipment remaining in crates and getting ruined before it is used, buildings falling into disrepair because there are no maintenance systems, research programs shut down because there are no skilled staff members to run the laboratories.

It is clear that the capacity to manage existing resources is crucial not only to the performance of research institutions but also to institutional survival. As IDRC engages in the institutional evaluation process, it is likely that assessments of the current status of resource management will provide insights into how future resources or grants will be used.

Four Components of Resource Management

- Infrastructure
- Human Resources
- Technological Resources
- Finance

Infrastructure

Infrastructure refers to the basic environmental conditions which enable work to transpire, for example, reasonable space in a building equipped with adequate lighting, clean water, and a dependable supply of electricity; transportation to and from work. In the North we take these conditions for granted, for we have the wealth and the governmental structures to support adequate infrastructure. In certain developing countries in which IDRC works, some of these basic conditions of work are missing.

Each institution has its own array of assets and liabilities with respect to infrastructure resources. The positive and negative points in each represent the starting points of what information to gather; if an institution has its basic infrastructure in place, this area will represent a small component of an evaluation; if infrastructure is debilitated,

however, with electricity and water found to be problem areas, then infrastructure will become a major concern.

As part of understanding capacity, one has to consider the extent to which inadequate infrastructure interferes with the functioning or the potential functioning of a specific research institution. Most of the time, deficiencies in one or more elements of infrastructure do not interfere with day-to-day work; however, at some point, work will be impacted. Typically, the crux of the issue is maintenance, which suffers due to the lack of recurrent budgets providing for upkeep.

As technology becomes more and more sophisticated, basic infrastructure will play an increasingly important role in the type of institutional support that IDRC and its partners can provide. For example, sensitive scientific equipment cannot tolerate intermittent electrical supply, so acquiring a generator may be necessary. And if water quality is poor, purification may be required or a new well may need to be drilled to rectify the situation.

Questions Typically Asked in Assessing Infrastructure

Does the institutional strategy identify the opportunities and constraints regarding infrastructure?

Are the buildings and internal services (water, electricity) adequate to support and facilitate daily work?

Is there adequate transportation to and from work for employees?

Are communications systems (hardware) functioning at a needed level?

Are there adequate maintenance systems and procedures that are supported by a maintenance budget?

Is building and equipment maintenance being managed? Is infrastructure being managed?

Is adequate planning ongoing to address infrastructure concerns? Is an individual or a group responsible?

Human Resources

The human resources (HR) of an organization consist of all individuals engaged in any of the organization's activities, regardless of roles. Managing the human resource function requires forecasting the demand and supply of staff needed to carry out the activities of the institution. HR management also entails keeping records of human resources so as to permit an institution to create a more equitable employment system.

Besides assessing staffing needs, some of the specific tasks involved in HR management include recruiting and hiring the best people possible, creating an evaluation system that rewards people and helps keep them in the organization, and providing for the ongoing learning and career development of employees. HR management is also a central function in achieving institutional equity.

Clearly, maximizing the performance of individual people in research institutions is essential to the research endeavour. It is well-recognized that the human resources of any organization are its most valuable asset. This is particularly true in research centres, where the people required to do the core work of the institution are highly trained individuals. The organization's HR management function is charged with planning and controlling this resource to make sure that peoples' needs are met. This is not merely an altruistic function, for it is highly likely that staff who are reasonably comfortable with working conditions and stimulated by the environment will be productive.

Questions Typically Asked in Assessing Human Resources

Are the right people in the right jobs in the institution?

Is adequate HR planning occurring?

Is there an adequate HR policy in place?

Is the workforce reflective of a fair gender and equity policy?

Is equity dealt with appropriately, particularly as relates to issues of selection and promotion?

Technological Resources

The technological resources of a research institution encompass all of the equipment, machinery, and systems, including library information system hardware and software, that are essential to the research and training function. It is important to keep in mind that the instruments of technology are merely tools for enhancing research endeavours: ideas must inspire the technology. Central issues in technology are that the technological resources of a research centre must be appropriate to the type of work the organization is doing and that they keep pace with the emerging ideas in each discipline.

Inappropriate technology can drive significant gaps between Southern and Northern research institutions, particularly in the hard sciences and engineering. Simply put, it is difficult to publish in the leading scientific journals using old technology. And in all disciplines, lack of access to the sophisticated means of accessing information used by colleagues worldwide will mean that institutions in developing countries will have difficulty building the networks required for global research. On the other hand, the provision of technology without a corresponding ability to use it is a waste of valuable resources.

Assessing the appropriateness of institutional technology is a complex endeavour. In general, one has to assess the ability of the institution and its units to create realistic plans for technology and to manage against these plans. If the plans are either "pie in the sky" ambitious, or not ambitious enough, an institution can have difficulty. In this context, it is helpful to have a clear understanding of the technological desires and the broader strategy of the institution.

Questions Typically Asked in Assessing Technological Resources

Is adequate technological planning occurring?

Overall, is the institution's level of technology appropriate to carry out its functions? Does any one unit seriously lag behind the others in the level of technology needed to carry out its work? Why?

Is access to international information provided to all units through library and information management systems?

Are there adequate systems in place for managing the institutional technology?

Are there adequate information technologies in place to manage the institution?

Finance

Financial management includes the prediction of financial resource requirements (operating and capital budgets) and cash management as well as the financial accounting function. Good management of budgeting and financial record-keeping is critical to overall organizational functioning. It enables essential information to be provided to the board and to those managers responsible for institutional resources. Good financial management also inspires confidence in funders who are interested in financial accountability and sound financial management.

Financial statements are a barometer of organizational health. Sound internal financial procedures regarding the administration of the organization's operating funds and likewise, of individual program grants, offer assurance to donors that their monies are being directed properly.

Of particular interest, when scrutinizing an institution's financial system, is assessing what information the financial system can provide to decision makers. Are budget plans timely? Are they updated as financial information comes in? Are there financial information reports that can be provided to senior managers, the board, and funders? Are the auditors of the institution happy with the controls of cash and assets being utilized by the financial managers? Are technology and human resources adequate to ensure a good financial control and information system?

Questions Typically Asked in Assessing Financial Resources

Is there adequate budgetary planning?

Is adequate information forthcoming to key decision makers regarding financial issues?

Are members of the governing structure involved in financial planning and monitoring?

Are important organizational goals supported by the budget and financial information, e.g. if international exchange of information is a goal, are there funds allocated for electronic data systems, for hosting international visitors, etc.?

Have the finances of previous grants been properly managed?

6.5 Process Management

Taking a vision and making it a reality through smooth-flowing, daily work in an organization is largely dependent on the ongoing "processes." These are the internal management systems, the many mechanisms which guide interactions among people to ensure that ongoing work is accomplished rather than hindered or blocked. They include planning, communication, decision-making, problem-solving, monitoring, and evaluation. Process management makes things happen in an organization.

Every piece of work in an organization goes through these systems; people interact to accomplish the work, and the way the organizational processes are set up dictates the tone of the interaction that takes place. Plans set directions, as do policies and procedures. Problem-solving, decision-making, and communication are all ways in which the people in the research institution create the flows of information that make things happen. If these processes are working, the real outcome is that the organization is learning and accomplishing a great deal.

Process management takes place at every level of an organization. Boards of governors must know how to plan, problem-solve, and make timely decisions. If they are deficient in these areas, organizational direction is often hampered. These same processes are at work all the way down the organizational hierarchy, albeit at more operational levels. For instance, project units and departments need to be able to set direction and create mechanisms to carry out activities in service of this direction.

Components of Organizational Processes

Planning
Problem-solving
Decision-making
Communications
Monitoring and Evaluation

Planning

Planning is the organizational process that helps predict how organization members will behave. At the highest organizational level it is the strategic plan that sets this direction. At the operational levels, planning becomes the process by which strategy is translated to specific objectives and methodologies to accomplish goals. It entails engaging resources of time and people optimally (developing time-lines and schedules).

Policy and procedure development are special types of plans. They set out courses of action within which organizational members behave and link all the processes that permeate the organization.

In research organizations, like many professional bureaucracies, the degree to which plans, procedures, and policies are explicit varies considerably across the institution. In general, organization members need enough direction to ensure they know what they must do to support the organization's mission and goals. Planning of policies and procedures provides this direction and occurs at all levels of the organization: for projects, for departments, and for the organization as a whole.

Questions Typically Asked in Assessing Planning Resources

Is adequate (or too much) planning and policy and procedure development occurring in the research institution? (At all levels, from the governing board to departments and individual projects.)

Is adequate planning in evidence, including project planning?
Do the resulting plans provide adequate direction to organizational members?

Are these processes supporting the culture management activities of the organization?
Are they contributing to the strategic direction of the organization?

Are plans, policies, and procedures generally followed? Why or why not?

Problem-solving and Decision-making

Plans, policies and procedures set the course for organization members, but these systems do not cover the wide assortment of actions and behaviours that people are asked to assume. This is particularly true in research institutes, which to a large part rely on the creativity and personal judgment of its researchers.

Problem-solving and decision-making are two interacting and mutually reinforcing processes which must function well at every level of an organization. At the most senior levels, governing groups must be able to identify those issues and problems that are blocking the organization from moving towards its goals and mission and act on these issues.

The problem-solving and decision-making processes entail the ability to define important problems, gather the data to frame the issue, create a set of alternatives to deal the with problem, decide on solutions, create the conditions to carry out decisions, and monitor these decisions and the problem's progression. Timeliness is a key element in this process: Organizations must be able to identify important issues and act in a timely fashion.

Questions Typically Asked When Looking at Problem-solving and Decision-making

Is the implementation of work at various levels of the organization smooth-flowing or blocked? If blocked, where in the system is it blocked?

Are performance gaps and opportunities identified by those in charge in sufficient time to resolve them to the benefit of individuals involved and the productivity of the organization?

Are there levels within the organization where inadequate problem-solving and decision-making are blocking progress towards goals?

Are decisions made in a timely manner?

Are adequate organizational problem-solving and decision-making skills found on the governing board and within the ranks of senior managers?

Are problem-solving and decision-making adequate in departments and for important projects?

Communications

The exchange of information and the achievement of shared understanding among people are vital goals of the internal communications function. Peters and Waterman, in *In Search of Excellence,* observed that "The excellent companies are a vast network of informal, open communications. The patterns and intensity of these communications cultivate the right people's getting into contact with each other." It is no different in research institutions. Continuous internal communication related to the mission and goals and about ongoing activities is an ongoing organizational requirement.

Internal organizational communications can serve as the glue holding institutions together, or it can break them apart, for both information and misinformation constantly flow in organizations. It is the role of the institution to create mechanisms that help its members to know and understand what is really going on in the institution. Coordinating committees, newsletters, and meetings of various sorts all provide the organization with communication vehicles to get the correct message out.

The clearer the message and the less distortion in the communication channel, the more chance the organization has in communicating its message to members. Unfortunately, communications are a complex matter. People use language in different ways. In research centres, staff are often from different linguistic or cultural backgrounds and have very different values. This can colour communications and contribute to their distortion.

Within the organization, accurate information is vital to keep employees informed and motivated. Besides needing specific information which enables them to carry out their

work properly, members of an organization also need the kind of information that makes them feel part of an important effort and a wider purpose. As with any organization, it is imperative for research institutions to meet the information needs and gain the understanding of all internal stakeholders.

(Communications with external constituents will be dealt with in "Intra-organizational Linkages," the section which follows.)

Questions Typically Asked To Assess Communications

Do people in the organization feel there is adequate, on-going communication about the organization's activities? What are the main vehicles of internal communications?

Do staff members receive information related to organization's mission and about progress in fulfilling the mission?

If information circulating in the organization about its activities becomes distorted, are there corrective mechanisms to remedy this?

Do people have easy access to those in the organization with whom they must deal? Can they communicate easily with them?

Monitoring and Evaluation

All organisms need feedback in order to survive, and institutions, as social organisms, are no different. Most of the time the feedback that organizations receive is informal, but many are increasingly taking steps to obtain feedback more systematically.

Monitoring and evaluation are the processes used by organizations to collect feedback. Theoretically, monitoring and evaluation are linked to the planning process. In this context, feedback should be obtained in a manner that permits comparing what has actually happened to what was planned. However, even when formal plans do not exist, it is important for institutions to assess how they are doing.

Monitoring is a formative activity integral to day-to-day management which involves periodically taking a look at how the organization, department, or project is doing. Monitoring allows for quick, corrective action: data obtained from monitoring are used to make changes designed to make performance better.

Monitoring is most often used in the financial area in order to assess how well an institution is doing in relation to its planned budget. Increasingly, however, with better management information systems, organizations are creating monitoring processes for other crucial aspects of their work to track how the institution is doing in relation to plans.

Evaluation is typically a more comprehensive, summative process. It involves making judgments about the merit or worth of some unit or activity around questions of relevance, effectiveness, and impact. For instance, should the research centre continue to support the women's entrepreneurship centre and at what funding level? Should the research institute retain a development office? What is the expected rate of return from this office?

Evaluations tend to be more time consuming and more methodologically complex than monitoring activities, thus they occur less frequently. In the institutional evaluation process, the important issues are (1) whether the systems either encourage or discourage monitoring and evaluation, and (2) what use is made of the data that these processes provide.

Finally, as organizations become more and more concerned about institutionalized learning — how individuals and the organization as a whole can improve and grow in knowledge — the processes of monitoring and evaluation become increasingly important. Whereas traditionally, monitoring and evaluation were merely components in the institutional reward and punishment system, nowadays attention is being paid to how data generated from these processes can be used for learning, improvement, and change. The assessment of monitoring and evaluation activities in a research institution can be an important component of organizational learning.

Questions Typically Asked When Assessing Monitoring And Evaluation Capacities

Are there policies and procedures that guide evaluation and monitoring?

Is monitoring and evaluation valued by the organization as a way to learn about itself?

How are data obtained and used to monitor and evaluate the institution's units and activities?

Are data gathered through organizational monitoring and evaluation activities utilized?

6.6 Inter-institutional Linkages

Note: This section will be further developed with the assistance of Anne Bernard of IDRC. Note will be made of the trend toward inter-disciplinary, inter-sectoral research and how this will affect institutional relationships.

For research organizations engaged in creating and utilizing knowledge, it is vital to cultivate contacts with other institutions, organizations, and groups of strategic importance to the work. These may be potential collaborators and collegial bodies, potential funders, or key constituents. Formal links with others can result in a healthy exchange of approaches and resources (including knowledge and expertise) and can serve as an important reality check.

Inter-institutional Outreach Can Be Accomplished Through:

Networks
Partnerships
External Communications

The research endeavour almost by definition requires external collaborations linkages of many types: finding those of similar intellectual interests with whom to exchange and test ideas, linking with others able to fund new ideas, working with colleagues outside the institution to share scarce visiting other research institutions, using other libraries, and participating external advisory committees in other organizations. This section discusses inter-institutional networks, partnerships, and external communication systems.

Collaborative Networks

Researchers have always engaged in collaborations which are mutually beneficial in solving problems and generating information in their fields. Typically, these collaborations have evolved naturally, as co-investigators discover others in their fields with common interests and important skills to contribute to projects.

"Networks" are a new form of wider-scale research collaboration. They involve larger numbers of investigators from disparate geographical areas, both within a country and internationally. These investigators regularly share information and approaches regarding research problems of common interest and produce scholarly work through internal, smaller-scale collaborations within the identified network. In Canada, the networking concept has been successfully institutionalized in the national *Networks of Centres of Excellence* program which formally links scientists from across the country who are working in a variety of research areas in which Canada is deemed to have a competitive advantage. A geographical "centre of excellence" is identified for each field, with various other sites designated as "nodes."

Communications Networks

Research institutions have always required ways and means to communicate and share data with colleagues. Historically this has occurred through attendance at conferences and through telephone and written communications, which can be time-consuming and/or costly. Today, as information technologies improve and become more accessible and reliable, computerized networks are emerging to facilitate communication among investigators and enable them to share data and experiences.

Computer networks are evolving to become a new organizational form. They tend to be non-hierarchical, boundary-less, and easy to access. On the other hand, to operate and maintain them requires some commitment of resources.

IDRC has been a leader in supporting the networking of researchers in the developing world. This networking has reduced the isolation of researchers spread across wide geographical areas and has allowed researchers to stay in contact with colleagues around the world.

Typical Questions Asked About Networking

To what extent is the research institution linked to the external world through collaborative networks? Computer networks?

Are the existing networks supported both financially and technically?

Have networks had an effect on the way the organization functions? Why? Why not?

Partnerships

Over the past decade, new alliances or partnerships have formed in both the developing and developed world to enable organizations of like minds to come together and share resources to achieve common goals and objectives.

Partnerships can be between funders and research institutions, as often occurs when Northern NGOs want to support a particular type of work within a research institute. Or they can occur between two similar institutions, as found in the linkage arrangements between Northern and Southern institutes. Partnerships can also occur between a research institution and its local stakeholder groups, as is often seen in health and agricultural research centres. *[Note: Here, will incorporate information about partnerships in IDRC-funded institutions.]*

External Communications

Formal and informal communications with key external players and constituents are vital to help foster important linkages. A continuous flow of information to the outside world keeps those in the wider environment informed, be they the general public, identified constituents, or specialized technical audiences.

In research, there is a continual need to communicate results — in the hard sciences, to remain credible in the field and competitive for funding, and in the social sciences, to contribute up-to-date information to the process of policy formulation.

External communications can take many forms. Indeed, they consist of any appropriate means to converse with the outside world. Besides journal articles, proven ways of communicating the organization's work to the wider public are newsletters and promotional materials crafted to create awareness and interest in the organization's work. Research reports and annual reports of activities serve to raise the organization's profile and, by keeping important stakeholders informed, can play an important role in linking the organization to the wider community.